

REMARKS

Referring to the Examiner's objections to the arrangement of the Specification, Applicant respectfully submits a substitute specification under 37 CFR 1.125 with properly titled sections and an Abstract. It is respectfully asserted that the substitute specification overcomes the objections.

Referring to the Examiner's objection to the Drawings, Applicant respectfully submits a "Prior Art" labeled Replacement Figure 1 in compliance with 37 CFR 1.121(d) and 1.84(c). It is respectfully asserted that the Replacement Figure 1 overcomes the objection.

Referring to the Examiner's objection to claims 4-7 for depending from multiple claims, Applicant respectfully refers the Examiner to Applicant's preliminary amendment dated January 31, 2003, which amends these claims to be singularly dependant. As such, Applicant respectfully asserts that this objection is overcome.

Referring to the Examiners rejections under 35 USC §101 and 35 USC §112 first paragraph, Applicant respectfully asserts that the new claims submitted above overcome Examiner's rejections. Applicant also respectfully asserts that the Examiner's rejections under 35 USC §112 second paragraph either do not apply to, or are overcome by the new claims submitted above.

Claim Rejections Under 35 U.S.C. §103(a)

Claims 1-3 (now most closely corresponding with 8-10) have been rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent Number 5,283,628 to Dotson ("Dotson" hereinafter) in view of United states Patent Number 4,847,509 to Millet ("Millet" hereinafter).

Applicant respectfully points out that Applicant's new method claim 8 recites, *inter alia*, "calibrating said first sensor." Calibrating the first sensor allows the processing

board to know that any given pixel of the sensor corresponds to a specific angle θ . Thus, the fiber diameter can be calculated from the equations appearing in claim 1, simply by adjusting parameters (A, B, D, ϕ) so that a theoretical curve of the interference pattern corresponds to an actual reference pattern received by the sensor. Dotson does not teach a calibration of sensors. Instead, Dotson teaches use of a reference fiber, wherein, "Once the two signals representative of the fiber diameter have been generated, they are simply averaged (i.e., added together and divided by two) to produce the desired final signal which is representative of the fiber diameter and which is substantially insensitive to fiber ellipticity." Therefore, Dotson does not teach all of the elements of Claim 8, or claims 9-13 that depend therefrom. As Millet does not remedy the deficiencies of Dotson, it is respectfully asserted that for at least he reasons above, Applicant's claims are not unpatentable over the combination of Dotson and Millet.

Furthermore, Applicant preliminarily, and respectively, submits that new device claim 14 is distinguishable over the combination of Dotson and Millet. Claim 14 recites, *inter alia*, "a first sensor and a second sensor, optically aligned and located in a focal plane of said optical system." Dotson does not teach optical alignment of the sensors/detectors. Instead, Dotson teaches "detectors which are symmetrically located relative to the system's axis." The Dotson detectors 29, 31 are taught to be symmetrically aligned to allow for an average of two measurements of the same parameter, while Applicant's sensors are optically aligned in a manner that allows for two measurements of differing parameters. Thus, as Dotson does not teach optical alignment of the sensors, it does not teach every element of claim 14, or claim 15 that depends therefrom. As Millet does not remedy the deficiencies of Dotson, it is respectfully asserted that for at least he reasons above, Applicant's claims are not unpatentable over the combination of Dotson and Millet.

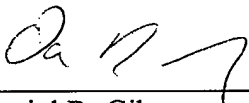
All of the rejections are herein overcome. No new matter is added by way of the present Amendments or Remarks, as support is found throughout the original filed specification, claims, and drawings. Notice of Allowance is respectfully requested.

If the Examiner has any questions regarding the instantly submitted response, Applicant's attorney respectfully requests the courtesy of a telephone conference to discuss any matters in need of attention.

If there are any additional charges with respect to this response or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicant's attorney.

Respectfully submitted,

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